08/616,371

(FILE 'HOME' ENTERED AT 14:06:34 ON 11 AUG 1997)

FILE 'CAPLUS' ENTERED AT 14:06:38 ON 11 AUG 1997

L1	1	S	NITRIC OXIDE(3W)(FERRIHEMOGLOBIN?)/TI
L2	255	S	(SICKLE CELL ANEMIA)/TI
L3	44551	S	(NO OR NITRIC OXIDE?)/TI
L4	0	S	L2 AND L3
L5	0	S	L2 AND (NITROSYLAT?)(2A)(HEMOGLOBIN? OR HB)
L6	17045	S	(HEMOGLOBIN?)/TI
L7	47	S	L2 AND L6
L8	250	S	(S-NITROS?)/TI
L9	0	S	L7 AND L8
L10	0	S	L2 AND L8
L11	23	S	(NITROSYLAT?)(2A)(HEMOGLOBIN? OR HB)
L12	2	S	L11 AND (SICKLE CELL?)
L13	2625	S	(BLOOD SUBSTITUTE?)
L14	1644	S	(SICKLE CELL ANEMIA?)
L15	6	S	L13 AND L14
L16	2	S	(ISOTHIOCYANATE) AND (BLOOD SUBSTITUTE?)
L17	1	S	(NITRIC OXIDE? DONOR?) AND (BLOOD SUBSTITUTE?)
L18	23	S	(NITROSYLAT?)(2A)(HEMOGLOBIN? OR HB)
L19	2	S	L18 AND (SICKLE CELL ANEMIA?)
L20	2625	S	(BLOOD SUBSTITUTE?)
L21	3	S	L18 AND L20
L22	0	S	(NITROSLAT?)(2A)(BLOOD SUBSTITUTE?)
L23	1188	S	(NO-DONOR?)
L24	0	S	L23 AND (SICKLE CELL ANEMIA?)
L25	2	S	L23 AND (BLOOD)(2A)(SUBSTITUTE?)

L1 ANSWER 1 OF 1 CAPLUS COPYRIGHT 1997 ACS

1993:503075 Document No. 119:103075 **Nitric oxide** binding to human **ferrihemoglobins** crosslinked between either .alpha. or .beta. subunits. Alayash, Abdu I.; Fratantoni, Joseph C.; Bonaventura, Celia; Bonaventura, Joseph; Cashon, Robert E. (Cent. Biol. Eval. Res., Food Drug Adm., Bethesda, MD, 20892, USA). Arch. Biochem. Biophys., 303(2), 332-8 (English) 1993. CODEN: ABBIA4. ISSN: 0003-9861.

AB The interactions between NO and oxidized human Hb were examd., comparing the behavior of unmodified HbA0 with that of two chem. modified Hbs. The latter are promising red cell substitute candidates due to their lower oxygen affinity and greater stability as tetramers. The modified forms examd. were HbA-DBBF, crosslinked between the .alpha. chains with bis(3,5-dibromosalicyl) fumarate, and HbA-FMDA, modified between the .beta. chains with fumaryl monodibromoaspirin. Nitric oxide binding to the oxidized forms of these Hbs is biphasic, due to the differing reactivities of .alpha. and .beta. chains. The structural modifications result in altered rate consts. for NO binding to both .alpha. and .beta. chains. The affinity of the ferric hemes for NO is not correlated with their oxygen affinities in the ferrous state. In as much slower first-order process, the ferric hemes of HbA become reduced. Faster and more heterogeneous kinetics are obsd. for redn. of the modified Hbs. These results may have physiol. relevance, since endogeneously produced NO is now recognized to play an important role in the relaxation of vascular smooth muscles. If present in vivo, cell-free Hbs exposed to NO become rapidly oxidized. Subsequent interactions of NO with ferriHb can result in redox cycling. This has the potential of depleting NO and further altering vascular tone with rates dependent on structural parameters of the ferriHb that are not detd. by oxygen affinity.